



**COLLEGE OF ENGINEERING, SCIENCE AND
TECHNOLOGY**

**SCHOOL OF AUTOMOBILE ENGINEERING &
ROAD TRANSPORT**



CERTIFICATE III IN AUTOMOTIVE ENGINEERING

Programme Details & Unit Descriptors

2014

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CERTIFICATE III AUTOMOTIVE ENGINEERING

1.0 INTRODUCTION

1.1	Title	Certificate III in Automotive Engineering
1.2	Background	<p>An articulation with both government and private industries was done regarding the make-up of the Automotive syllabus content and requirements.</p> <p>Just this year, 2014, the Automotive syllabus and requirements had been aligned to the Fiji National Qualifications Framework (FNQF) to ensure standards are implemented, in place and followed accordingly. In aligning with the FNQF, it ensures that our graduates have more opportunities available to them both locally and globally regarding work commitments thus raising the profile of their marketability and also the genuine recognition of our courses that were both developed and conducted here in Fiji.</p>
1.2	Rationale	<p>This course aims to meet the needs of students who have a general interest in automotive trades as well as those intending to choose a career pathway into traditional trades and related service industries. The Government of Fiji through the Vice Chancellor of the Fiji National University have promoted students from year 10 to enter to their choice of skills and trades of which we have tasked to prepare this certificate I, II and III to meet the demands.</p> <p>Fiji is currently experiencing a skills shortage in traditional trade areas. There is also an increasing demand in Fiji and elsewhere for people able to assume highly skilled roles in areas deploying rapidly developing technologies. There is a need for more highly trained new workers and up-skilling of existing workers in the manufacturing and service industries as the levels of newer technologies are increased.</p> <p>This course provides opportunities for students to develop relevant technical, vocational and interpersonal competencies suitable for employment and further training. They can also develop skills, knowledge and experiences - such as teamwork, communication and occupational health and safety- that are transferable to other industries.</p> <p>The range of skills and knowledge in the manufacturing and service industries has increased and will continue to increase. New technologies are constantly replacing recent ones so there is a great need for people involved at any level in the production or use of them to be adaptable. Students and workers need to be able to acquire knowledge quickly and to develop and apply new skills effectively. These skills are transferable so can be used across a wide range of trades and industries. It is also important to maintain traditional skills and attitudes used with older technologies where they underpin and support the newer technologies.</p> <p>There is an increasing tendency for workers to have several career changes during their lifetime and there are pressures on people to extend their working lives. These changes require retraining that may be funded by industry, but is very often the responsibility of the individual. This course provides students with the best possible base for lifelong learning and for pursuing relevant career choices.</p>

1.3	Graduate Profile	<p>A successful graduate will be able to make a contribution within a wide range of activities, both on site and in the workshops. Technical knowledge will allow graduates to:</p> <ol style="list-style-type: none"> 1. Solve issues with some level of difficulties with routines and standard procedures. 2. Solve problems within a limited range of predicable solutions which involve selection, basic comparison and routine decision making. 3. Use well developed practical skills to perform a wide variety of tasks to meet specific standards and quality control requirements. 4. To follow general instruction under high supervision, and take responsibility for other team members; and maintain and set up tools/equipment to perform a range of standard tasks in a safe and workmanlike manner.
1.4	Philosophy	<p>The philosophy of the course is based on student outcomes and the production of a portfolio of work including both practical and theoretical assignments to demonstrate competencies. This portfolio will include examples of both institutional and industrial work.</p> <p>The program offered provides a recognizable qualification and a sound base for Automotive Engineering students' intending to specialize in this trade practices. The training develops student's skill and knowledge of the processes involved.</p>
1.5	Aims & Objectives	<p>This course is aimed at students who:</p> <ol style="list-style-type: none"> 1. Are seeking a career in the Automotive Engineering Trades Industry 2. Wish to enhance and develop a range of practical skills for life 3. Wish to undertake a course in which they can gain recognition of prior learning or credit transfer when entering appropriately related post school education and/or training; and/or require a foundation of skills and knowledge that can be built on as the need arises <p>This course should enable students to:</p> <p>Understand the concepts, techniques, terminology and content appropriate to the industry focus of the course</p> <ol style="list-style-type: none"> 1. Demonstrate employment related practical skills and the workplace best practices 2. Demonstrate problem solving ability incorporating evaluation techniques and skills 3. Relate basic numeracy and scientific principles to practical applications 4. Demonstrate oral, written and graphical communication skills 5. Work independently and collaboratively in accordance with occupational health, safety principles, industry standards, and ethics. 6. Demonstrate an awareness of existing and emerging technologies and career pathways

2.0 PROGRAMME REGULATIONS

2.1	Admission Requirements:	<ol style="list-style-type: none">1. Minimum entry requirement (MER) for the program shall be successful completion of studies up to year 11 of continuous progression, or its equivalent. (Refer to UASR section 6.3.3 page 25)2. Applicants who may not meet the 11 years of continuous progression requirement, but who are able to demonstrate their ability to succeed in programmes at these levels on the basis of maturity, work experience, or prior learning may also be admitted to the program. The Dean may require such candidates to sit for any specific or general examination.
2.2	Credit Value	The programme contains 16 units. The total program credit points are 137.
2.3	Programme Duration	The Program can be completed at a full time duration of 3 Trimesters and 600 hours of industrial attachment.
2.4	Cross Credit	This course will give students credit transfer into Certificate IV Automotive Engineering course.
2.5	Assessment	<p>The Board of Studies determine the standards required for the grades of performance in a unit and for the basis on which academic credits shall be granted.</p> <p>Any work presented by a student for assessment must be the work of the student and not be submitted elsewhere in any other unit or programme unless or otherwise permitted by Programme Leader.</p>

3.0 PROGRAMME STRUCTURE

3.1 Unit Table

No.	Unit Code	Unit Title	Pre-requisite	Level of Unit	Credit Value	Contact Hours	SDL Hours	Total Learning hours
TRIMESTER 1								
1	AUT 321	Basic Vehicle Mechanical Systems	MER	3	7	60	40	100
2	AUT 322	Basic Vehicle Mechanical Systems Workshop	MER	3	9	108	27	135
3	AUT 323	Basic Vehicle Electrical & Electronic System	MER	3	7	60	45	105
4	AUT 324	Basic Vehicle Electronics & Electronic Workshop	MER	3	9	108	27	135
5	AUT 325	Automotive Workshop Safety & Procedures	MER	3	8	72	48	120
TRIMESTER 2								
6	AUT 326	Fundamentals of Vehicle Body Technology	AUT321	3	8	72	48	120
7	AUT 327	Fundamentals of Vehicle Body Technology Workshop	AUT322	3	10	108	42	150
8	AUT 328	Vehicle Service Information & Preventative Maintenance	AUT321 AUT323	3	8	72	48	120
9	AUT 329	Vehicle Service Information & Preventative Maintenance Workshop	AUT322 AUT 324	3	10	108	42	150
10	COM 301	Technical Communication	MER	3	5	60	24	80
TRIMESTER 3								
11	AUT 330	Fundamentals of Engine Technology & Fuel System	AUT326	3	8	72	48	120
12	AUT 331	Fundamentals of Engine Technology & Fuel System Workshop	AUT327	3	11	144	21	165
13	AUT 332	Basic Engineering Drawing	MER	3	8	72	48	120
14	ETH 301	Fundamentals of Ethical Practices	MER	3	5	48	27	75
15	CIN 301	Computer Use and Application	MER	3	4	36	24	60
PRACTICUM								
16	AEE 340	Industrial attachment	MER	3	20			600
TOTAL								
					137			2355

4.0 ASSESSMENT

4.1	Assessment Philosophy	This program has been designed in consultation with a local industry adviser and the Fiji National University to ensure that students have opportunities for smooth transitions into work and further education in the Automotive Engineering Trades Industry.
4.2	Methods of Assessment	<p>The assessment of competence needs to have as its primary focus the competencies upon which the course is based. Assessors need to develop an assessment strategy where the different assessment items will enable them to obtain sufficient evidence to judge that the students have attained the competency. This evidence must be gathered over a number of assessment items. Competence does not mean being able to demonstrate once or twice.</p> <p>The most appropriate method for assessing workplace competency is through demonstration and observation in the workplace, under normal working conditions and with the assistance of tools, equipment, job aids and work colleagues that would normally be available in the workplace. Where this is not available, a simulated workplace will be used.</p>
4.3	Criteria for Assessment	The criteria for the award of grades will be in accordance with UASR page 41.
4.4	Fairness, Validity & Reliability	<p>The programme contains mainly examinable units in order to provide fair assessment across a wide range of academic abilities. Examinable units provide a high degree of objectivity whereas the few non-examinable units provide a measure of non-quantifiable personality factors through a more subjective approach such as a student's conscientiousness, inter-relations with peers and superiors and general attitude towards work.</p> <p>Each unit carries at least one summative test. Marks for these and other forms of course work are entered onto the program record spreadsheet which is submitted to the Examination Board for scrutiny. Examinable units have their papers moderated prior to sitting and afterwards, the marking is assessed. Results are scrutinized by the School Examination Board prior to submission to the College Academic Board.</p> <p>Definitions of Boards and other quantifiable assessment criteria and validation are explained in full in the University Academic and Student Regulations.</p>

5.0 TEACHING & LEARNING STRATEGIES

5.1	Introduction	The Teaching and Learning process shall be designed to meet the learning outcomes with an emphasis on student – oriented and self-directed learning activities. The main theme shall be anchored on applied Technology directly related to workshop practice.
5.2	Student centred Learning	Encourage the development of the independent learner and the teaching strategies will accommodate the following: <ol style="list-style-type: none">1. The amount of classroom time, reference books and written resources.2. The amount of workshop time, where classroom learning is applied in real life situation.3. Graded projects will be used to facilitate the development of independent learning skills.
5.3	Methods	<ol style="list-style-type: none">1. In-class exercises and class discussions2. Quizzes3. Individual and group demonstrations4. Individual tutorials5. Regular and meaningful feedback6. Use of information and communication technologies7. Questionnaires8. Practical projects

6.0 MONITORING, EVALUATION & REVIEW OF PROGRAM

6.1	College Academic Board	The Board of Studies composition as detailed in the University Academic and Student Regulations is assembled to review, discuss and amend programme curricula.
6.2	Examination Boards	The Examination Board composition as detailed in the University Academic and Student Regulations sits to review, discuss and amend individual results by consensus at the end of every stage.
6.3	On-going Monitoring	Program review committee does this role and it is an ongoing process
6.4	External Moderation	N/A
6.5	Industry Advisory Committee	Consists of: Ministry of Education, Industries representatives, Head of School, Programme Leaders.